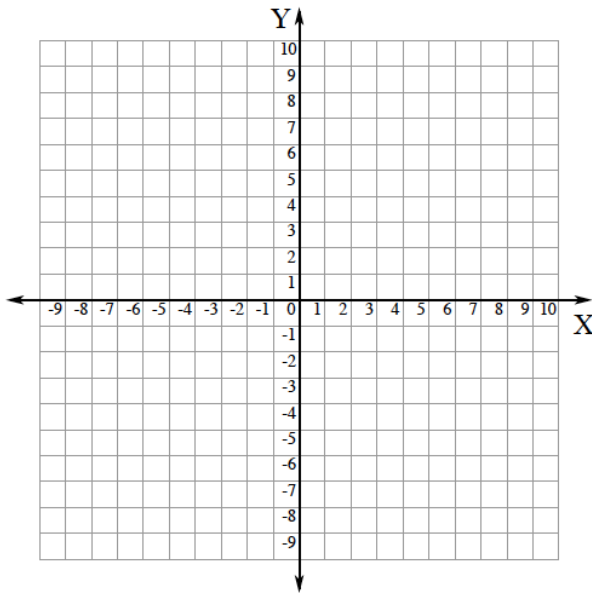


NAME \_\_\_\_\_ DATE \_\_\_\_\_ PD \_\_\_\_\_

**Show your work and circle your answers!**

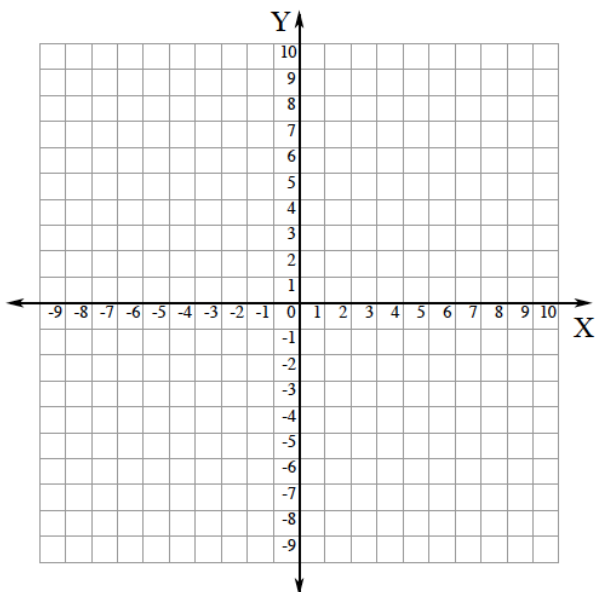
1.) Solve the system by graphing:  $\begin{cases} x - y = 4 \\ x + y = 6 \end{cases}$



2.) Solve the system by substitution:  $\begin{cases} 8x + y = -16 \\ -3x + y = -5 \end{cases}$

3.) Solve the system by elimination:  $\begin{cases} 5x + y = 9 \\ 10x - 7y = -18 \end{cases}$

- 4.) Graph the system: 
$$\begin{cases} y > 2 \\ y \leq 3x - 1 \end{cases}$$



- 5.) Simplify:  $3^4 \cdot 3^2 \cdot 3^{-10}$

- 6.) Simplify:  $\frac{15x^3y^{-2}}{45xy^{-6}}$

- 7.) Simplify:  $\left(\frac{xy^3}{y^{12}}\right)^{-3}$

- 8.) Simplify:  $(a^3b^{12})(a^3b)$

9.) Simplify:  $\frac{35a^2c}{5a^2b^9}$

10.) Write the following number in Scientific Notation: 0.0076523

11.) Multiply:  $(2 \times 10^3)(4 \times 10^{-7})$

12.) What type of polynomial has two terms?

13.) What is the degree of this monomial:  $-x^{12}y^4z^7$

14.) What is the degree of this polynomial:  $8x^9 - 7x^3 - 6x + 1$

15.) Simplify:  $6a - 4b + 11c - 7a + 4b$

16.) Simplify:  $(x + 2y - 7) - (3x + 2y - 8) - (y + 10)$

17.) Multiply:  $x^2y(x^2y + 6x + y)$

18.) Multiply:  $-5a(6a - 4b + 2)$

19.) Multiply:  $(x + 12)(x - 12)$

20.) Multiply:  $(x^2 - 6)(x^2 + 3)$

21.) Find the prime factorization of 72.

22.) Is 105 a prime or composite number?

23.) Find the greatest common factor of 120 and 64.

24.) Factor:  $17x - 51x^4$

25.) Factor:  $2a^5 - 6a^3b + 3a^7c$

26.) Factor:  $x^2 + 9x + 14$

27.) Factor:  $x^2 - 64y^2$

28.) Factor:  $4x^2 - 23x - 6$

29.) Factor:  $x^2 + 16x + 64$

30.) Factor:  $x^2 + 4xy + 4y^2$

31.) Solve by Factoring:  $x^2 + x - 20 = 0$

32.) Solve by Factoring:  $x^2 - 36 = 0$

33.) Simplify:  $\sqrt{225}$

34.) Simplify:  $\sqrt{48}$

35.) Simplify:  $\sqrt{\frac{4}{25}}$

36.) Simplify:  $\sqrt{a^3 b^5 c}$

37.) Simplify:  $\sqrt{18a^6 b}$

38.) Add:  $7\sqrt{15} + 7\sqrt{5} - 3\sqrt{15}$

39.) Add:  $-\sqrt{24} + 7\sqrt{54}$

40.) Multiply:  $\sqrt{3} \cdot \sqrt{6}$

41.) Multiply:  $\sqrt{\frac{1}{9}} \cdot \sqrt{\frac{3}{4}}$

42.) Multiply:  $6\sqrt{3}(-1 - 2\sqrt{3})$

43.) Multiply:  $-4\sqrt{x^3 y^2} \cdot 3\sqrt{8x^2 y^7}$

44.) Multiply:  $(5 + \sqrt{20})(3 - \sqrt{2})$

45.) Multiply:  $(\sqrt{2} + 2\sqrt{5})^2$

46.) Divide:  $\frac{\sqrt{20}}{5\sqrt{2}}$

47.) Divide:  $\frac{\sqrt{10}}{\sqrt{6}}$

48.) Solve for the missing side of a right triangle that has a hypotenuse of 20 feet and a leg of 16 feet.

49.) Solve for the hypotenuse of a right triangle that has leg lengths of 3 feet and 4 feet.

50.) Find the diagonal of a square that has a side length of 6 inches.

**51.) Find the mean of the following set of data:**

**1, 1, 6, 7, 8, 13, 15, 21, 22, 30, 34**

**52.) Find the median of the following set of data:**

**1, 1, 6, 7, 8, 13, 15, 21, 22, 30, 34**

**53.) Find the mode of the following set of data:**

**1, 1, 6, 7, 8, 13, 15, 21, 22, 30, 34**

**54.) What is the upper quartile of the following set of data?**

**1, 1, 6, 7, 8, 13, 15, 21, 22, 30, 34**

**55.) What is the interquartile range of the following set of data?**

**1, 1, 6, 7, 8, 13, 15, 21, 22, 30, 34**

**56.) What percent of the data is below 6 in the following set of data?**

**1, 1, 6, 7, 8, 13, 15, 21, 22, 30, 34**

**57.) A marble is drawn from a bag containing 2 green, 4 red and 5 white marbles. What is the probability that the marble chosen will be red?**



- 58.)** The letters of the word ALGEBRA are written on index cards and placed in a brown bag. If one letter is selected at random, what is the probability that the letter drawn is an L?
- 59.)** The letters of the word ALGEBRA are written on index cards and placed in a brown bag. If one letter is selected at random, what is the probability that the letter drawn is an A or a B?
- 60.)** The letters of the word ALGEBRA are written on index cards and placed in a brown bag. If two letters are selected at random, what is the probability that the first letter drawn is an A and the second letter drawn is a G?